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**Attachment J01**

## **Sierra Army Depot (SIAD) Water System**

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## **J01 Sierra Army Depot Water System**

### **J01.1 Sierra Army Depot Area Overview**

Sierra Army Depot (SIAD) is located in sparsely populated Lassen County in northeast California, approximately forty miles southeast of Susanville and fifty-five miles northwest of Reno, Nevada.

“Sierra serves as the U.S. Army's Rapid Delivery Logistics Facility and a DOD strategic power projection support platform providing world-wide, world class logistics support in the form of maintenance, assembly, and containerization as the Army's only (CITE) Center of Industrial Technical Excellence for critical operational project stocks including deployable medical systems, medical supplies, petroleum and water systems, aviation

systems, Force provider and other items. Store and care take demilitarization account ammunition. On order, become the Center of Industrial Technical Excellence for Resource Recovery, Recycle and Reuse (R3) ammunition demilitarization. In these days of change and increased competition, Sierra has adopted a competitive corporate philosophy with the vision: "To be the preferred source of war reserves and remain the Army's center of excellence for all project stocks and be the recognized leader in munitions demilitarization." The aggressive and diversified workforce, known as Team Sierra, represents one of the best in the Department of Defense. They are committed to continuing to provide the best quality products and services to their customers, as they have done for nearly sixty years. From its beginnings, with General Order No. 9, signed by General George C. Marshall on February 2, 1942, Sierra Army Depot has established an enviable record of service mainly because of a most important resource--its people. Sierrans have made major contributions to our Armed Forces and our country since the establishment of the Army installation".

Source: Sierra Army Depot web page [www.sierra.army.mil](http://www.sierra.army.mil)

## **J01.2 Water System Description**

The SIAD water treatment and distribution system was generally constructed between 1943 and 1960, and expanded during the 1970s. The existing system may include, but is not limited to wells, mains, pump stations, elevated and ground level tanks, services, hydrants, Valves, and appurtenances. In general, the system is of advanced age, although individual components have been replaced over time as part of routine maintenance. The distribution system is composed of various types of pipes ranging in size from two to fourteen inches in diameter. All raw water comes from four deep wells located within the main cantonment area, ranging in depth 350-550 feet below ground surface. Water from the wells is chlorinated at each of the wellheads. The SIAD water supply is under the jurisdiction of the California State Department of Health Services, Puplic Water Supply Branch.

Below is the description of the water and wastewater systems and their inventories. They are included in this section to provide the Offeror with a general understanding of the size and configuration of the systems. The Offeror shall base the proposal on site inspections, information in the bidder's library, other pertinent information, and to a lesser degree the following description. Under no circumstances shall the successful Contractor be entitled to any rate adjustments based on the accuracy of the following system description and inventory.

The Contractor shall comply with all applicable federal, state, and local regulations governing the operation of the water system.

### **J01.2.1 Water System Fixed Equipment Inventory**

#### **J01.2.1.1 Description**

SIAD water system consists of:

**1. Wells:** SIAD receives all raw water from four deep wells located within the main Cantonment area:

- a. *Well #2* - Located near the 1.25 MG reservoir, this well uses a 60 HP pump with a manually operated diesel engine backup system to pump directly to the ground reservoir. Its controls are tied together with Well #8 so that both wells can pump together for dilution. The well pump shaft and bearings were recently replaced, but Well #2 is currently out of service due to high nitrates in the groundwater. Even though the well is out of service, the diesel engine is regularly exercised. Trichloroethene (TCE) has also been detected, but with levels well below MCL limits. Monitoring wells were installed in 1996 to monitor potential contaminant migration. The meter for well #2 is a Hersey-Sparling turbine meter and it is located in a pit just outside of the well house.

Treatment at Well #2 consists of polyphosphate addition and chlorination. A separate chlorine room is located on the backside of the well building where chlorine cylinders and injection equipment is stored. The chlorine injector has had trouble in the past with clogging due to iron and manganese buildup (the injector uses chlorinated water.) The phosphate feed system, consisting of a mixing tank and a metering pump, is also located in the chlorine room. Well #2 is currently not being used because of high nitrate content in the water.

- b. *Well #5* - Located off of Susanville Road to the East of the main SIAD area, this well uses a 100 HP pump with no backup system. It pumps directly into the system. This well was drilled in 1953 and re-lined in 1967and. Well #5 is currently operated 24 hours/day during the summer. This continuous operation has resulted in the static level of the well dropping from around 150' at the beginning of the sprinkler season to a current level of 238'. The well depth is approximately 500-600' with the well pump located at 300' depth. The well has a sand trap that was replaced in 2003 to dispose of flow when the well is purged. Each purge cycle uses approximately 200+ gallons of water.

The motor for this well is of advanced age and has been leaking oil for some time, although it continues to run well to date. The meter is a Rockwell turbine meter that is approximately 15 years old.

Treatment at Well #5 consists of polyphosphate addition and chlorination. A separate chlorine room is located on the backside of the well building where chlorine cylinders and injection equipment is stored. The phosphate feed system, consisting of a mixing tank and a metering pump, is also located in the chlorine room. The impeller on the chlorinator is replaced yearly due to the sand.

- c. *Well #8* – Well #8 is operational, but it is currently out of service. It was constructed in 1964 to replace Well #4, which caved in. This well pumps into a common feeder line with Well #2 and pumps into the ground reservoir. It does have a diesel backup system that is manually operated and exercised regularly.

This well has a Rockwell turbine meter that was replaced approximately 10-12 years ago.

Treatment at well #8 consists of polyphosphate addition and chlorination. A separate chlorine room is located on the backside of the well building where chlorine cylinders and injection equipment is stored. The chlorine injector has had trouble in the past with clogging due to iron and manganese buildup (the injector uses chlorinated water). The phosphate feed system, consisting of a mixing tank and a metering pump, is also located in the main pump room.

- d. *Well #9* – Well 9 was redrilled approximately 100 feet from the original well in 2003. All of the original equipment was used for the newly drilled well #9 except a new pump was installed. This well is operational but its currently awaiting for State Permit in order to be in service.

- e. In the past, other wells have been used in the SIAD water system. Currently, none of these wells are connected to the system.

## 2. Ground Storage

There is one ground storage reservoir on the existing SIAD water system. The bottom and sides of the reservoir are constructed of concrete. A 1.5" to 8" concrete topping was added to the bottom to correct the drainage slope, reducing the capacity to approximately 1.2 million gallons. This ground storage has a flexible EPDM rubber cover, which is in poor condition. Chlorine is also added to the water at the reservoir. It is likely that this tank has a significant buildup of solids due to the extended period of time since it has been cleaned and to the high levels of iron and manganese in the system.

## 3. Elevated Storage Tanks

There are three elevated storage tanks in the system. They were constructed in the late 1950s or early 1960s. In general, the exterior of these tanks appear to be in fair condition. However, they

have had very little maintenance performed and are all in need of complete rehabilitation, particularly on the inside.

Available SIAD records indicate that the exterior of the tanks were painted in 1982 using a lead-based paint system. Drawings are also available showing a planned interior paint project for the same period of time. However, since records of this project are not available, it is not clear what work was actually performed. In either case, the coatings on the tanks likely have lead based paint.

- a. 125,000-Gallon Storage Tank - The main elevated tank in the system has a volume of 125,000 gallons and is located near the ground reservoir. The exterior of the tank appears to be in fair condition with some evidence of surface rust, but in need of rehabilitation. The interior of the tank is most likely in need of rehabilitation as well. A new cathodic protection system was installed in 1991. The tank high water elevation is 4220.5 feet.

The other two tanks are located to the North near the old special weapons area.

- b. 40,000-Gallon Storage Tank – This is the smaller of the two tanks, and is located near Boiler Plant 7. It appears to be in fair condition with some surface rust showing on the legs and near the overflow. The cathodic protection system for the tank was installed in 1991 and consists of an interior poly-rope with floats. The high water elevation of the tank is 4117.2'. The tank has an exterior pit that houses system valves and an altitude valve for the tank. However, the pit is very rarely visited. It appear that there is only one common line into and out of the tank. There is an abandoned well located near the tank. This well used to pump into the tank, but has been out of service for a number of years due to poor water quality. There are valves located inside the old well house that are still part of the distribution system. These valves appear to be fairly new, but do have some signs of minor corrosion.
- c. 60,000-Gallon Storage Tank - This tank is located adjacent to the Special Weapons Area. The exterior of the tank appears to be in fair condition, with some indications of surface rust. However the interior condition is in question. According to the maintenance personnel, the interior column pipe is split about 20' up, but when the tank is in service the split does not pose a major issue since both sides of the interior pipe is pressurized. The high water elevation of this tank is 4126.2 feet. The valve vault next to the tank contains an altitude valve and several shutoff valves. This vault is rarely accessed and there appears to be significant corrosion of the piping in this vault. The cathodic protection system for this tank was also installed in 1991 and is identical to the 40,000-gallon tank.

#### **4. Booster Pumps**

High service pumps pump water from the reservoir to the system and to the elevated storage tanks. These pumps are located in three buildings near the reservoir. The first building houses two General Electric electric motor driven pumps (50 hp each), the second building contains one Baldor electric motor driven pump and two Cummings 152 hp diesel engine driven pumps, and the third building contains two Cummings 152 hp diesel engine driven pumps. All of the diesel engines appear to be fairly new (approximately 3 years old) and in good operating condition. All pumps are rated at 1,000 gpm. They are manually operated, and exercised regularly. The level of the water in the 125,000 gallon elevated tank automatically controls the pumps in the first building. The pumps are significantly older, but also appear to be well maintained.

There is an alarm with a five-minute delay that the operators respond to. Once the problem is identified, the diesel engines can be started up for the wells and booster pumps. This is not a solid-state system but meets the current needs of SIAD.

#### **5. Additional Water System Components**

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- a. Pressure Reducing Valve (PRV) - This PRV is located near the surveillance building and separates the system into two distinct pressure zones. This is a 6" PRV located in a pit inside of a small building. This valve was replaced in 2004. The piping inside this vault is somewhat corroded. There is a gas chlorine feed system in the building, above the vault, with a feed line down to the spool piece. This chlorine system used to work off of differential pressure but was problematic so a pump was added. There are still problems with the system related to very low demand on the downstream side of the PRV.
- b. Backflow Preventers - There are approximately 96 backflow preventers currently properly maintained by SIAD personnel. The backflow preventer at the primary lagoon is improperly installed below ground level and will need to be replaced.
- c. Water Meters – There are 5 water meters, one for each of the non-Army water customers. All 5 water meters were replaced in 2004.

### J01.2.1.2 Inventory

**Table 1** provides a general listing of the major distribution system fixed assets for the Sierra Army Depot. The system will be sold in a "as is, where is" condition without any warranty, representation, or obligation on the part of Government to make any alterations, repairs, or improvements. Ancillary equipment attached to, and necessary for, operating the system, though not specifically mentioned herein, is considered part of the purchased utility.

**Table1**

Item	Size (in)	Quantity (Approximately)	Unit
<b>Vitrified Clay/Asbestos Cement/Cast Iron Pipe</b>			
	14	5,100	Linear feet
	12	36,000	Linear feet
	10	32,000	Linear feet
	8	62,000	Linear feet
	6	29,000	Linear feet
	4	200	Linear feet
	3	4,700	Linear feet
	2 or less	1,000	Linear feet
<b>Services (100 feet in average)</b>		109	Each
<b>Fire Hydrants</b>		196	Each
<b>Post Indicator Valves</b>		32	Each
<b>Pressure Reducing Valves</b>		1	Each
<b>Main Valves</b>		223	Each
<b>Backflow Preventers</b>		96	Each
<b>Water Meters</b>		5	Each
<b>Wells</b>			
Well #2		Rated Capacity:	990 gpm
Well #5		Rated Capacity:	596 gpm

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Well #8	Rated Capacity: 1010 gpm
<b>Ground Storage</b>	Capacity: 1,250,000 gallons
<b>Elevated Storage Tanks</b>	
Tank #1:	Capacity: 125,000 gallons
Tank #2:	Capacity: 40,000 gallons
Tank #3:	Capacity: 60,000 gallons

### J01.2.2 Water Distribution System Non-Fixed Equipment and Specialized Tools Inventory

Government-owned tools, vehicles and equipment that are not a physical part of the water distribution system and are used by the Government for system operation and maintenance shall remain the property of the Government.

**Table 2** lists other ancillary equipment (spare parts) and **Table 3** lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

**Table 2**  
**Spare Parts**  
**Water Distribution System**

Qty	Item	Make/Model	Description	Remarks
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None.

**Table 3**  
**Specialized Equipment and Vehicles**  
**Water Distribution System**

Description	Quantity	Location	Maker
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None.

### J01.2.3 Water System Manuals, Drawings, and Records Inventory

**Table 4** lists the manuals, drawings, and records that will be transferred with the system.

**Table 4**  
**Manuals, Drawings, and Records**  
**Water Distribution System**

Qty	Item	Description	Remarks
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The Installation maintains a limited collection of manuals, drawings and records on installed components of the water system. These may not be completely up-to-date and may show elements as active that have been abandoned in place. This information or copies thereof will be transferred during the transition period.

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